SWRE C7004: Software Testing

Module Details

Module Code:	SWRE C7004
Full Title:	Software Testing APPROVED
Valid From:	Semester 1 - 2019/20 (June 2019)
Language of Instruction:	English
Duration:	1 Semester
Credits:	5
Module Owner::	Gerry Coleman
Departments:	Unknown
Module Description:	Students completing this module will be able to apply effective testing techniques within a range of software development methodologies. Students will learn key business skills such as working on their own initiative and, as testers, the ability to communicate testing information to a wide audience, including team members, managers, end-users and sponsors/customers.

Module Learning Outcome	
On successful completion of this module the learner will be able to:	
#	**Module Learning Outcome Description**
MLO1	Explain the importance of software testing within software development projects.
MLO2	Compare and contrast debugging activities with effective software testing
MLO3	Create and apply unit testing using an automated test framework
MLO4	Apply coverage tools to determine the effectiveness of test cases
MLO5	Create functional tests using specification-based techniques

Pre-requisite learning
Module Recommendations *This is prior learning (or a practical skill) that is strongly recommended before enrolment in this module. You may enrol in this module if you have not acquired the recommended learning but you will have considerable difficulty in passing (i.e. achieving the learning outcomes of) the module. While the prior learning is expressed as named DkIT module(s) it also allows for learning (in another module or modules) which is equivalent to the learning specified in the named module(s).*
No recommendations listed

Module Indicative Content
Overview of Software Testing What is testing? Testing types and levels
Testing within software lifecycles Waterfall model and phases; Agile development and testing approaches
Testing Vs Debugging Differences between testing and debugging; Uncovering defects Vs removing defects; Cost of testing and cost of debugging; preventive testing
Unit testing Testing individual units; automated unit test frameworks; Test-first development
Code coverage Using coverage tools to measure the effectiveness of unit tests; Statement and decision coverage
Functional testing Applying specification-based (black-box) techniques to applications; Use of equivalence partitions and boundary value analysis to maximise effectiveness and reduce test volume

Module Assessment

Assessment Breakdown	%
Course Work	50.00%
Final Examination	50.00%

Module Special Regulation

Assessments

Full Time

Course Work

Assessment Type	Short Answer Questions	**% of Total Mark**	10
Marks Out Of	0	**Pass Mark**	0
Timing	Week 5	**Learning Outcome**	1,3
Duration in minutes	0		

Assessment Description
In-class exercise and quiz to solidify early learning

Assessment Type	Class Test	**% of Total Mark**	20
Marks Out Of	0	**Pass Mark**	0
Timing	Week 8	**Learning Outcome**	3,4
Duration in minutes	0		

Assessment Description
Students will be required to create a series of unit tests, and determine coverage levels, for a provided application

Assessment Type	Class Test	**% of Total Mark**	20
Marks Out Of	0	**Pass Mark**	0
Timing	Week 10	**Learning Outcome**	1,2,5
Duration in minutes	0		

Assessment Description
Each student will take a multiple choice assessment to determine their knowledge of testing and testing techniques

No Project

No Practical

Final Examination

Assessment Type	Formal Exam	**% of Total Mark**	50
Marks Out Of	0	**Pass Mark**	0
Timing	End-of-Semester	**Learning Outcome**	1,2,3,4,5
Duration in minutes	120		

Assessment Description
End-of-Semester Final Examination (Closed book)

Part Time

Course Work

Assessment Type	Short Answer Questions	**% of Total Mark**	10
Marks Out Of	0	**Pass Mark**	0
Timing	Week 5	**Learning Outcome**	1,3
Duration in minutes	0		

Assessment Description
In-class exercise and quiz to solidify early learning

Assessment Type	Class Test	**% of Total Mark**	20
Marks Out Of	0	**Pass Mark**	0
Timing	Week 8	**Learning Outcome**	3,4
Duration in minutes	0		

Assessment Description
Students will be required to create a series of unit tests, and determine coverage levels, for a provided application

Assessment Type	Class Test	**% of Total Mark**	20
Marks Out Of	0	**Pass Mark**	0
Timing	Week 10	**Learning Outcome**	1,2,5
Duration in minutes	0		

Assessment Description
Each student will take a multiple choice assessment to determine their knowledge of testing and testing techniques

No Project

No Practical

Final Examination

Assessment Type	Formal Exam	**% of Total Mark**	50
Marks Out Of	0	**Pass Mark**	0
Timing	End-of-Semester	**Learning Outcome**	1,2,3,4,5
Duration in minutes	120		

Assessment Description
End-of-Semester Final Examination (Closed book)

Reassessment Requirement

A repeat examination
Reassessment of this module will consist of a repeat examination. It is possible that there will also be a requirement to be reassessed in a coursework element.

Module Workload

Workload: Full Time

Workload Type	*Contact Type*	*Workload Description*	*Frequency*	*Average Weekly Learner Workload*	*Hours*
Lecture	Contact	Deliver theory, principles and paradigms.	Every Week	1.00	1
Practical	Contact	There will be three timetabled laboratory classes per week. In these lecture/practical classes, the delivery of new material will be integrated with the practical implementation of that material.	Every Week	3.00	3
Directed Reading	Non Contact	Reading of lecturer-recommended information sources.	Every Week	1.00	1
Independent Study	Non Contact	Independent practical work	Every Week	3.00	3
				Total Weekly Learner Workload	8.00
				Total Weekly Contact Hours	4.00

Workload: Part Time

Workload Type	*Contact Type*	*Workload Description*	*Frequency*	*Average Weekly Learner Workload*	*Hours*
Lecture	Contact	Deliver theory, principles and paradigms	Every Week	1.00	1
Practical	Contact	There will be three timetabled laboratory classes per week. In these lecture/practical classes, the delivery of new material will be integrated with the practical implementation of that material.	Every Week	3.00	3
Directed Reading	Non Contact	Reading of lecturer-recommended information sources	Every Week	1.00	1
Independent Study	Non Contact	Independent practical work	Every Week	3.00	3
				Total Weekly Learner Workload	8.00
				Total Weekly Contact Hours	4.00

Module Resources

Recommended Book Resources

Brian Hambling, Angelina Samaroo and Geoff Thompson. (2015), Software Testing: An ISTQB-BCS Certified Tester Foundation Guide, 3rd. BCS, [ISBN: 1780172990].

Supplementary Book Resources

Rex Black, Gerry Coleman, Marie Walsh et al.. (2017), Agile Testing Foundations: An ISTQB Foundation Level Agile Tester guide, 1st. BCS, [ISBN: 1780173369].

This module does not have any article/paper resources

Other Resources

[Website], www.softwaretestpro.com.

[Website], www.stickyminds.com.